Poster

NanoBiT based toolkit to study protein-protein interactions in C.elegans

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ABSTRACT

Motivation: The study of interactions between proteins is very relevant in the investigation of molecular biology and biomedicine. In this project we want to generate a new method for the study of protein-protein interactions (PPIs) based on NanoLuc Binary Technology (NanoBiT) and using as model organism C. elegans.

Methods: NanoBiT is a two-subunit system, LgBiT (17,6 kDa) and SmBiT (11 amino acids), and based on luminescence. Each subunit will be fused to a specific protein and when the interaction between both proteins occur the subunits will be linked generating a luminescent signal.We are using cloning techniques to generate plasmids with the constructs we are interested in using Sap-Trap protocols and conventional cloning protocols. These plasmids will be inserted as single copies into the genome of C. elegans. Then, different strains of worms will be crossed to obtain the ones we are looking for. We will use the NanoBiT system to be able to check if there is interaction between our proteins of interest.

Results: We have obtained several intermediate products in our cloning scheme. These include transsplicing cassettes expressing fluorescent GFP that will facilitate identification of transgenic animals. We have also obtained codon-optimized fragments that encode the two luciferase components SmBiT and LgBiT.

Conclusions: If we have sucess with this project we could use the method for a fast analysis of protein interactions.

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